CARBOT
Assembly Instruction

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http://www.thingiverse.com/thing:1688612
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Disclaimer:

This manual is only a reference when you assemble your carbot. Although we have tried our best to provide accurate information in this manual, we can’t avoid all the mistakes or errors, we are irresponsible for any of these. We reserve the right to make changes and correct errors.

For latest updates, visit our web site at http://www.thingiverse.com/thing:1688612

Before assembling, please check the version of your carbot.
1. Instruction

This is an attempt to design a fully 3D print wheel robot with flexibility in the way (auto-pilot and control by Anrdoid phones) to play. It also serves as education material here on 3D modelling, 3D printing and Arduino programming.

2. Necessary Components

It is easy to get a carbot, all you need is components as below:
3D printed Components:

- 1 x MainBody
- 2 x RearWheels
- 1 x FrontWheel
- 2 x WheelHolders
- 1 x Ultrasonic Distance Sensor Holder
- 2 x MotorHolder
- 2 x FrontWheel Holder
- 1 x Motor Driver Holder

硬件:

- 4xM3x25 screws and nuts for fixing motors (cable ties also will do)
- 12xM2x6 screws for other parts
- 12xM2x6 screws for other parts
- Battery wire
• Rubber band for back wheel tires

**Electronics:**
• 1 x Arduino board
• 1 x L9110 H bridge motor driver
• 2 x DC Motor
• 1 x Ultrasonic distance sensor HC-SR04
• 1 x 18650 Lithium-ion battery
• 1 x SPP-C Bluetooth UART or equivalent for Android phone control
## 3. Assembly Instruction

<table>
<thead>
<tr>
<th>Before</th>
<th>After</th>
<th>Steps</th>
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<tbody>
<tr>
<td><img src="image1" alt="Before Step 1" /></td>
<td><img src="image2" alt="After Step 1" /></td>
<td><strong>Step 1 :</strong> Fix the motor driver holder to the back of the main body</td>
</tr>
<tr>
<td><img src="image3" alt="Before Step 2" /></td>
<td><img src="image4" alt="After Step 2" /></td>
<td><strong>Step 2 :</strong> Fix the Ultrasonic Distance Sensor Holder to the front of the main body.</td>
</tr>
<tr>
<td><img src="image5" alt="Before Step 3" /></td>
<td><img src="image6" alt="After Step 3" /></td>
<td><strong>Step 3 :</strong> Fix L9110 H bridge motor driver to the back of the main body.</td>
</tr>
<tr>
<td><img src="image7" alt="Before Step 4" /></td>
<td><img src="image8" alt="After Step 4" /></td>
<td><strong>Step 4 :</strong> Fix the Ultrasonic distance sensor HC-SR04 to the Ultrasonic Distance Sensor Holder</td>
</tr>
<tr>
<td>Step</td>
<td>Description</td>
<td></td>
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<tr>
<td>------</td>
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<tr>
<td>5</td>
<td>Find components in the left picture and combine them together with a screw.</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Combine the battery with the battery holder.</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Fix the rear wheels to the motors.</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Fix the motors and the wheel holders just like demonstrated in the pictures using cable ties.</td>
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<tr>
<td>Step 9</td>
<td>Fix the front wheel with the two wheel holders.</td>
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<tr>
<td>Step 10</td>
<td>Fix the main body to the two wheel holders.</td>
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<tr>
<td>Step 11</td>
<td>Connect the wire to the L9110 H bridge motor driver.</td>
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<tr>
<td>Step 12</td>
<td>Connect the wires like the demonstration in the right picture.</td>
<td></td>
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</tbody>
</table>
Step 13:
Connect the wires like the demonstration in the right picture.
And you will get your carbot!

4. Circuit Diagram
All we need to connect here are two motors, a L9110 H bridge motor driver, Ultrasonic distance sensor HC-SR04 and a Arduino board.

Please connect the wires as the circuit diagram above demonstrated.

**Attention:** Please check the color of the wires again before connecting, wrong connection may break the electronic components.

You have already finished assembling the carbot! Enjoy!